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BY KIM S. NASH



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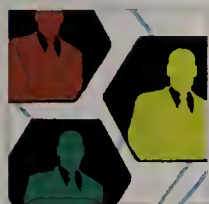
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Do It Yourself 28

COVER STORY Building your own software sounds nuts. But five companies found competitive advantage in doing just that.

BY KIM S. NASH



Steve Rubinow, CIO of New York Stock Exchange Euronext, has found that in-house application development provides a competitive edge over industry rivals.



FROM THE
EDITOR IN CHIEF

DIY Advantage

One of my daughter's first complete sentences was a toddler's declaration of independence: "I do it self!"

Whatever skill she was honing at the time (using a spoon, tying a shoe-lace), she knew instinctively that being in control was the best option. Maybe not the fastest way to get it done, but certainly the most rewarding.

That DIY spirit crackles and pops throughout Senior Editor Kim S. Nash's snappy cover story this month ("Do It Yourself," Page 28). "Not everything in IT is a commodity like a box of 500 picnic forks," she points out. The story explores the risks and rewards of building your own enterprise software—an idea that sounds almost quaint in these fevered days of everything packaged and everything cloud.

Each of the companies featured in our story—Alcoa, New York Stock Exchange (NYSE) Euronext, private equity firm Kohlberg, Kravis and Roberts (KKR), Owens and Minor, Eurpac—took the DIY route to gain a competitive advantage. "Building is not easy," as Steve Rubinow, CIO of NYSE Euronext, says. "If it were, everyone would do it and we'd get no edge."

And what an edge it can be, in the right circumstances. At KKR, for example, the creation of its own business intelligence system gave the firm a competitive weapon so powerful that the company founders praise it publicly and other equity firms wish they could buy it.

"It's a boost to the staff when KKR has competitors in to look at what the analytics system can do," says CIO Ed Brandman, who spent \$2 million on the development effort. "That's a big deal." Brandman notes how far the IT pendulum has swung away from building in-house, so it's an especially big commitment for companies that do decide to go that route.

Despite their successes, none of the CIOs in our story would sugar-coat the downsides of a DIY enterprise software project. Mapping out the forecasted costs and potential returns is tricky. Uncertainties run high and the risk of failure is even higher.

The biggest wild card of all is your in-house talent, which has to excel at everything, including development and project management, plus be experts in enterprise architecture and business processes. And it doesn't hurt to have a healthy dose of pioneer spirit.

Today my daughter makes her living as a software developer at Google, the world's most successful haven for do-it-yourself IT innovators. When it comes to "I do it self!" there are still some believers out there.

Maryfran Johnson, Editor in Chief, CIO Magazine & Events
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start

CHATTER

Google+ = Legal Woes?

As Google+ tries to become the hot new **social networking site**, enterprises need to make sure they aren't **blind to its risks**. Staff Writer Kristin Burnham did some digging into its dangers and offers tips for staying on the **safe side with Google+**, such as adding the site to your company's **social media policy** and understanding its **privacy settings**.
www.cio.com/article/687142

Fresh BlackBerrys

In an effort to keep up with **Apple and Android**, Research in Motion has released **five new models of the BlackBerry smartphone** as part of its 2011 portfolio. Senior Online Writer Al Sacco tells us that the new versions are **updates to the Torch and Bold** and are the first to run the **BlackBerry 7 OS**. The Torch 9810, now with a silver casing, has been enhanced with **more RAM and a faster processor**, while the 9850 and 9860 have the largest displays ever for BlackBerrys. The Bold 9900 has **mobile payment capabilities**.
www.cio.com/article/687121

ERP Market Flux

Over the past year, there have been a number of **mergers and acquisitions** among companies that offer ERP software. Senior Online Writer Todd Weiss tells us how all the changes can affect your company and lets you know **what to be aware of**. In talking to an analyst, Weiss learned that two good strategies for **covering your bases** when anticipating change are keeping an eye out for **alternative vendors** (in case yours is acquired) and watching what vendors are doing as they **pursue cloud strategies**.
blogs.cio.com/node/16432

Compiled by Editorial Assistant Lauren Brousell. Have a comment about a story in this issue? Go to www.cio.com/issue/20110901 or write to letters@cio.com.



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FROM THE **CEO**

Shadow IT Returns

As CEOs press for growth and business leaders find opportunity all around them in today's global economy, an old IT nemesis is back. Shadow or rogue IT is becoming a prominent issue for CIOs once again. And while it's far from new as an IT-management problem, there is now greater risk and complexity involved when business units go rogue and bypass the IT group to set up their own applications, hardware or IT services.

This challenge is not only about security and standardization, but also about how the IT organization will function most effectively moving forward. (For a deeper look at the future of rogue IT, watch for our Sept. 15 cover story.) I've talked with many CIOs lately about how the mega-trends of cloud, mobile, social media and consumer technologies are effectively supersizing their rogue IT problems. Company politics and career concerns also come into play, since most CIOs want to say "yes" to the business more often than "no."

What these latest technology trends are doing is undermining the centralized controls CIOs so carefully put in place over the last few years. The cost efficiencies of standardization and the increased ability to manage risk when everyone goes through IT for their technology don't seem to sway the argument in IT's favor anymore. Because speed-to-market and profitable results are prerequisites for success, business decision makers aren't willing to wait for IT to deliver. This real-time world is pressing IT hard to deliver more value across the entire business.

Yet there's only so much any IT organization can accomplish on its own. I've heard in recent conversations with CIOs how unrealistic the pressure to deliver on all these projects has become. Some of you have started to realign your organizations, placing IT staff directly within the individual business units. Sound familiar?

Only this time, IT is stepping up as the core service provider (or the front-line manager with third-party providers) that allows business units to get the speed they want while still providing corporate security and standards. What also feels different this time around is how CIOs are setting the framework and taking part in those senior leadership decisions earlier in the game.

I'd love to hear what you think about shadow IT in 2011. Are you embracing it or fighting it?

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A photograph of three business professionals (two men and one woman) in business attire, standing and looking at a laptop screen. They are in a dimly lit room with a large, curved architectural element in the background.

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CIOs Shift Security Focus to Data

GERMANY Revelations about the 2010 Stuxnet virus that targeted Siemens industrial control systems underscore why security needs to be top-of-mind for businesses today, says Guus Dekkers, corporate CIO of aerospace giant EADS and CIO at aircraft manufacturer Airbus. Dekkers is working closely with Dieter Schmidbaur, CIO of EADS security division Cassidian. "We [face] attacks that cannot be repelled by classical methods, such as a virus scanner or firewall," says Schmidbaur. CIOs have been focused on protecting infrastructure, he says, but now see that they must focus on protecting the information itself. Dekkers and Schmidbaur believe identity- and access-management technologies and certificates will play a more important role than before. There must be ongoing development of intrusion-detection systems and other network-monitoring solutions to detect and prevent today's malicious activity, they say. www.cio.de

Eyeing the CEO Post? Don't Be Mr. Fix-It

NEW ZEALAND Garry Collings says it is "miserably wrong" for people not to view the CIO as someone who can readily transition to a general management role. "It is a real paradigm shift for people to believe that an IT, CIO-caliber kind of guy can run a business," says Collings, who is general manager of logistics company Toll United. His past roles include CIO of Toll New Zealand, the parent company of Toll United and, prior to that, CIO of Mainfreight.

"The one thing that IT gives you is grounding to run a business. What better way to understand how a business operates than to write an IT product for them, because you must know every facet of the business," he says.

His advice to CIOs who want to take the step up to general manager roles and even CEO? "As soon as possible, get people to view you as a leader and a provider of business solutions, not a technology guru," Collings says. "One of the biggest pains of being a CIO is everybody thinks you can fix everything. So when people come and ask you to fix something, the worst you can ever do is fix it—what you need to do is put them through to a member of your team that can assist them."

Collings says the CIO can then use the opportunity to initiate another type of conversation. "Seize the opportunity to talk to them and say, 'I have [an IT team member] working on it right now. By the way, what is your biggest business challenge right now?' Seize the opportunity for them to believe they can talk to you about general business situations." cio.co.nz

Pay Now Bigger Lure Than Job Satisfaction for IT Talent

UNITED KINGDOM If you are on a recruitment drive, the biggest lure is a generous pay package, not job satisfaction.

A recent Chartered Institute of Personal Development (CIPD) survey of 2,000 workers found over half cited pay as the top reason for wanting to change jobs.

The report from the CIPD, the industry body that represents HR professionals, suggests the economic downturn is eroding employees' standards of living. Extended pay freezes and job insecurity are causing more people to seek out better-paying jobs.

One IT leader, who wished not to be named, says, "I don't think the results come as a surprise." He adds that, in the public sector especially, IT cuts have meant that the IT role has been reduced to a keeping-the-lights-on function with very little opportunity for job satisfaction. www.cio.co.uk

—Compiled by IDG News Service from CIO magazine affiliates worldwide

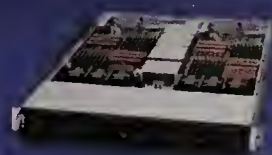
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The Innovator's DNA

Mastering the Five Skills of Disruptive Innovators

By Jeff Dyer, Hal Gregersen and Clayton M. Christensen

Christensen, author of the 2003 bestseller *The Innovator's Dilemma*, returns to the topic with this follow-up. This time, he and co-authors examine how individuals, not companies, come up with successful innovations. He finds that the skills required to generate ideas can be learned, and identifies five behaviors that allow this creativity. Among them, carefully observing others' behavior, and drawing connections between seemingly unrelated problems. *Harvard Business Review Press*, \$29.95



The 11 Secrets of Highly Influential IT Leaders

The Critical Path to Accessing and Succeeding in the Executive Suite

By Marc J. Schiller

BOOK After all these years of struggling for recognition, Schiller points out, many CIOs still don't feel like other executives are really listening to them. To help change that, he lays out a road map for getting your ideas heard and your opinions respected. He gives tips on how to build credibility, then advice on how to avoid some common communication pitfalls, and finally strategies for how to share your vision and get the company to act on it. The book also comes with a pointer to an online influence assessment test, to help you see how well you're doing and learn what your strengths are. *Rain Partners*, \$49

Social Media Analytics

Effective Tools for Building, Interpreting, and Using Metrics

By Marshall Sponder

BOOK Your company can't afford to ignore what people are saying about it on social media, but the marketing department can't do anything with all that data without IT's help. To help you make this partnership effective, Sponder shows you how to figure out which services and individuals to pay attention to, how to pull out the relevant information, and what kind of analytics to apply to get your desired result. *McGraw-Hill*, \$35

Defend Your Research: What Makes a Team Smarter? More Women

By Anita Woolley and Thomas Malone

RESEARCH Professors Woolley and Malone (of Carnegie Mellon and MIT, respectively) found that when people are sorted into groups by IQ and asked to perform certain tasks, putting smarter people in the groups didn't make as big a difference as ensuring the groups included women. This research report, published online by the *Harvard Business Review*, theorizes that since women tend to be more socially sensitive than men, perhaps women are ensuring everyone's ideas get heard, which maximizes the benefits of working as a group rather than individually. And, they add, the more women in the group, the more pronounced the effect. <http://bit.ly/ltn8KV>

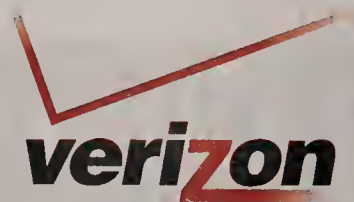
The Two-Second Advantage

How We Succeed by Anticipating the Future—Just Enough

By Vivek Ranadivé and Kevin Maney

BOOK It will come as no surprise to you that data, when properly processed, provides a huge competitive advantage. This book breaks down how people and technology process information to figure out what will be the exact right thing to do a second from now and execute in time to take full advantage of the moment. *Crown Business*, \$25

Compiled by Copy Editor Colleen Barry. To tell us what you're reading, write to letters@cio.com.



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Desktop Virtualization for Financial IT

Compliance, mobility and changing workplace needs converge for anytime, anywhere choice.

IT organizations in many financial services firms are turning to desktop virtualization to gain the upper hand over a wide array of often conflicting requirements, such as improving security and compliance while also increasing flexibility and support for personally owned mobile devices.

With desktop virtualization, financial organizations are realizing they can provide a personalized, high-definition experience to every worker anywhere, anytime, while centralizing resources to bolster security of information assets.

In the area of mergers and acquisitions, desktop virtualization makes it easier—and faster—to remotely manage the deployment of hosted desktops to workers of an acquired company, rather than physically installing or reconfiguring thousands of traditional PCs. In a recent survey of 107 executives from the CIO audience, conducted by IDG Research on behalf of Citrix and IBM, 28 percent indicated an unanticipated benefit of their desktop virtualization projects was the ability to support inorganic growth through acquisitions. "The rollout of applications is that much easier," says one IT executive. "No desktop visits are required."

Among other findings from the survey, 89 percent of respondents indicated desktop virtualization was on their technology roadmap, with 47 percent having already deployed and 21 percent testing or piloting solutions.

Financial organizations can rely on desktop virtualization to rapidly deliver secure access to desktops, applications and corporate data for workers who are facing business disruption. Workers can be equipped to do their jobs wherever they may be located—even with bandwidth constrained network connections and personal computers that have never before been connected to the corporate network.

For many, virtualizing the desktop environment also represents a unique opportunity to address critical IT resource issues such as Windows 7 migration and requirements for rapid application delivery.

The benefits of moving from a device-centric, distributed computing model to a user-centric, virtualized computing model are well worth the effort when you follow a standardized, fact-based approach to design the optimum delivery method for applications.

IBM and Citrix collaborated in the design of a transformation approach that takes advantage of new delivery models, such as public and private cloud, while leveraging virtualization. The IBM Smart Migration and Application Delivery approach provides a standardized, repeatable way to implement virtual desktops in environments of all sizes, utilizing IBM Smart Business Desktop Solutions. This methodology, which has been utilized to help organizations with large-scale desktop virtualization deployments, follows four key steps:

- Workplace assessment
- Windows 7 compatibility and application rationalization
- Architecture recommendations and deployment
- Continuous analysis and monitoring

Many organizations find that desktop virtualization offers a fundamentally better approach to desktop architecture, relieving IT of the pain and costs of supporting an outdated desktop model.

However, many IT departments do not have the in-house skills for such a transformation project. The IDG Research survey found that half of those who have implemented desktop virtualization or plan to do so had used the services of a consultant, an outsourcer or a managed services provider. Most who relied on outside services opted to do so in both the rollout and the management and optimization phases. External services offered customers access to experienced skills and methodology to lower risk and increase success rate.

To read more about how IBM Smart Business Desktop Cloud services with Citrix desktop virtualization technology can assist in assessing needs and building a comprehensive roadmap to transform your workplace, visit www.CIO.com/whitepapers/ibmcitrixfinance.



Spreading the Word

At Random House, social software trumps email for keeping employees informed **BY KRISTIN BURNHAM**

With more than 10,000 books and other products launching every year, publishing company Random House needed a solution to help employees manage and share information and improve communication. Email, says VP of IT Chris Hyams Hart, wasn't cutting it. "If you have a really important message you need to get to people, email is where it goes to die," he says. "People needed a sense of ambient awareness—they needed to know what was going on around them."

Hart and his team wanted employees to be able to more easily distribute information from existing systems. They deployed enterprise collaboration software from Socialcast, which puts users in control of the information they want to consume. For example, employees can follow the status of a person, system alert or project. When a status changes, only subscribers to the information receive an alert. If an employee is involved in a project with another department, she can choose to follow their alerts, then unsubscribe when she no longer needs to be in the loop, Hart says.

While Random House is in the early stages of its Socialcast deployment, Hart offers tips for ▶▶

►► **Social software** Continued from Page 11

changing users' preconceptions about social technology and shifting their behavior.

Reforming Employee Mind-Sets

When the IT department introduced Socialcast, some employees derided it as "Facebook at work"—a means to write inane posts and procrastinate. To thwart this mind-set and encourage adoption, Hart's team rolled it out first to groups where improved communication about critical projects was a business priority. He also emphasized to users that if they did or said anything inappropriate, it would be visible to managers.

Employees' early posts usually indicated something they wanted colleagues to know—a good instinct, Hart says, but not quite what he intended. He wanted them to solicit information, too. "Something more along the lines of, 'I'm doing this and if you tell me what you're doing we can collaborate better.'"

Hart enlisted senior leaders to set an example, which provided an unexpected benefit: Employees who weren't previously using external social media learned how to use it properly. "Knowing what to say and how to support our authors, titles and our strategy online is a big part of our future," Hart says.

While it's tempting to measure success based on how often employees post, Hart prefers to assess engagement. Out of 100 people, he says, there might be only one who posts anything. Frequent posters can help to convince others to use the tool and share projects, but Hart looks at how many people join groups where they can see information, and how many make comments or like others' posts.

Socialcast won't eliminate email, Hart says, so it doesn't make sense to calculate a financial ROI. "I think the focus needs to be on making the company faster, more self-aware. The goal of it is speed—pulling together in one shared forum with no segregation."

Contact CIO.com Staff Writer Kristin Burnham at kburnham@cio.com. Follow her on Twitter: twitter.com/kmburnham.

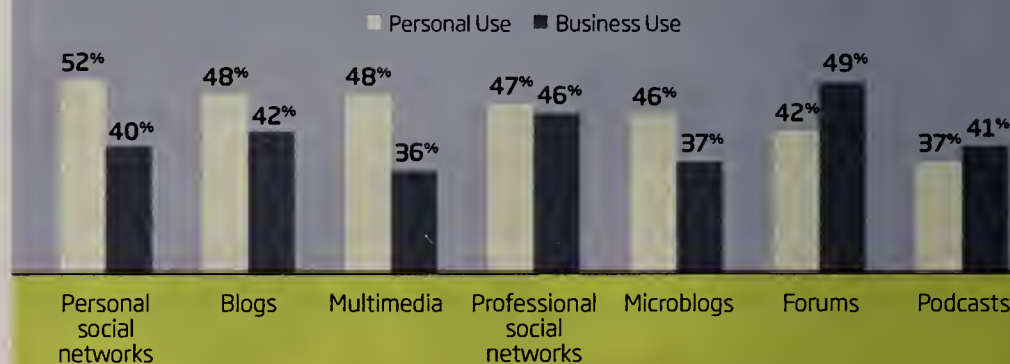
"If you have [an] important message, email is where it goes to die."

—Random House VP of IT
Chris Hyams Hart

crunch

Don't Take This Personally

Your employees are probably checking Facebook while at work. But odds are good they're also using social media for business.



SYMANTEC/APPLIED RESEARCH SURVEY OF 1,225 I.T. AND BUSINESS LEADERS

So Far, Apple Wins Mobile

Despite Android's strong overall growth, enterprises still appear to be wary of the mobile operating system, according to data released by mobile security vendor Good Technology.

Overall, iPads accounted for 27 percent of new devices using Good's system during 2011's second quarter, compared to 24 percent for Android phones. Android tablets made up just 3 percent of overall tablet activations, a decline compared to the first quarter, Good says. In addition, customers activated twice as many iPhones as Android smartphones. iPhones represented 66 percent of all smartphone activations, while Android had 33 percent.

Because sales of Android phones have surpassed the iPhone in the overall market, the report indicates that it's specifically enterprises that are reluctant to embrace Android. One likely reason why: enterprises worry the phones aren't secure enough.

Good also found that financial services companies began adopting mobile devices in a big way. The segment represented 40 percent of all activations. Financial services workers showed particular interest in the iPad, accounting for 47 percent of all iPad activations.

—Nancy Gohring

...**35%** Consumers planning to buy an iPhone 5 when it's released. Experian ...**17,000** Comments on Netflix's blog post announcing a price increase. Netflix ...**64%** U.S. companies using a social media tool internally. Prescient Digital Media

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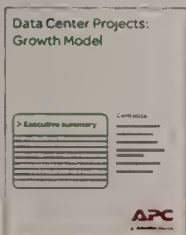
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Make What's New Normal

Innovators succeed by proposing practical ideas and executing them the way they would any business initiative **BY JACK BERGSTRAND**

One of my favorite clients was Shaun B. Higgins, when he was CFO and later European president for the bottler Coca-Cola Enterprises. Shaun is a character, and he enjoyed repeating that funny and useful axiom, "If you don't know where you are going, any road will get you there." From Shaun, I learned an important lesson about innovation: Innovators need to know where they are going and behave as if what they're doing is the most natural thing in the world.

Innovation often fails. The failure rate of new technologies or business ideas is estimated at between 50 percent and 90 percent. The success rate of large technology projects is consistent with these findings, hovering at around 30 percent year after year.

At the same time, innovation is critical to a company's success, if not survival. Fortunately, we can learn from companies that have created grand successes, reinventing how organizations and individuals use technology. While your innovations might not revolutionize an industry, you can still make innovation a natural and successful part of doing business.

Ideas That Make Sense

A key insight from successful innovators is that their innovations are never wacky ideas. Innovations that work derive from a clear insight about a problem that needs solving, and they're linked to a strong implementation capability.

Where brainstorming is designed to generate an idea a minute, innovation requires a focused commitment to executing a single idea. (For more on finding new ideas, see "Unearthing Innovative Ideas," Page 24.)

Bill Gates saw the future of the PC as a tool, and he decided to exploit the power of standard hardware to provide the platform for standard software. Hasso Plattner of SAP understood the potential benefits to companies of inte-

grating a full suite of corporate software and of using established consulting firms to sell and implement it. Sergey Brin and Larry Page recognized that the search engine wasn't a consumer product, it was a corporate platform for managing information. And Mark Zuckerberg saw the power of human communities to beat viral marketing as a way to spread the word. Of course, Steve Jobs is a serial innovator—advancing new models for computers, animation, media and personal communications.

Natural Leadership

Management legend Peter Drucker understood that management is a social science; its success depends on how well human beings interact, rather than on following predetermined processes.

Innovation demands pure, instinctive management. You may not have conventional wisdom to fall back on when determining how projects should proceed.

Meanwhile, your team needs your energy and passion to see the project through. Once you are committed to executing a single, innovative idea, it is important to behave as you would when leading any business

initiative: setting a direction and guiding your team to the goal. As Shaun Higgins might say, now that you know where you're going, choose the best road to get there.

Innovation comes from the top. But you don't have to be famous, or a CEO, to lead it. All leaders are at the top in one way or another; if not as the head of a company, then by running a business function, a department, or a team. Simply be innovative, and then act naturally.

Jack Bergstrand is founder and CEO of Brand Velocity. He is author of *Reinvent Your Enterprise* and the new e-book *Making Knowledge Work for You*. He is a former CIO of the Coca-Cola Company, and was CFO of Coca-Cola Beverages. Contact him at jb@brondvelocity.com.

You may not have conventional wisdom to fall back on when determining how innovation projects should proceed.

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Recycling PCs? Donate Instead.

Consider the greater good when crafting your green efforts

BY ELANA VARON

When we write about sustainability in CIO, we often focus on how IT leaders can help their companies cut energy consumption. It's an obvious target because it's relatively easy to quantify.

Whether or not you have formal goals for reducing carbon emissions, those kilowatts saved and gallons of heating oil conserved drop right to the bottom line.

But there's more to running a sustainable enterprise than managing its appetite for pollution-generating commodities.

"We're not just talking about climate change and recycling and energy conservation," says William Blackburn, who runs a corporate sustainability consultancy. "We look across the board at environmental, social and economic issues together." A strategic approach to sustainability takes into account your company's impact on the communities it serves and operates in.

That may sound daunting, and more than a little hard to measure. But a program in Minneapolis suggests a brilliantly simple way to make a dent: instead of recycling old PCs as you refresh your hardware, donate them.

For the past two years, the city, in partnership with its desktop provider, Unisys, has turned over approximately 1,100 old PCs to a nonprofit called PCs for People, which refurbishes them and then gives them to low-income families. They're reusing equipment in a way that helps to sustain the community by advancing economic and educational opportunity for its residents. (The program won a 2011 *Computerworld* Honors award.)

Spread the Digital Wealth

"If our residents are more digitally savvy, hopefully they will be more productive, live better lives and feel like the city contributed to that happening for them," says CIO Otto Doll. "If one of the people who gets the machine ends up

starting a business, we want that business to be in Minneapolis. We want them to feel this is a true digital society."

Donating the equipment doesn't cost the city, or Unisys, any more than sending it to a recycling facility, says Jeff Wilke, the Unisys program executive who manages the Minneapolis account.

"Our processes that we follow in the disposal of the equipment didn't change," Wilke says. Before turning over the computers, Unisys employees wipe the hard drives as a security measure, as stipulated in the city's contract.

Twenty-five states have electronic waste recycling laws, according to the National Center for Electronics Recycling. Most require manufacturers to take back equipment or pay for recycling; some also ban e-waste from landfills. Yet in 2010, the Environmental Protection Agency estimates that only 40 percent of computers that were ready to be replaced, as measured by weight, were recycled.

Minneapolis doesn't calculate how its program affects its carbon footprint. Neither does Sappi Fine Paper North America. The manufacturer donates e-waste from four locations in Maine and its Boston headquarters to eWaste Alternatives, which employs people with disabilities to refurbish the machines for use by low-income families, schools and nonprofits.

"The social aspect of working with eWaste Alternatives to benefit all of the communities and nonprofits they support was one of the primary factors" that convinced the company to donate, said Sappi's CIO, Anne Ayer, in an email. It doesn't hurt that the company has also reduced its e-waste disposal costs by at least 75 percent.

Why couldn't your company do the same? I think it's a no-brainer.

Contact Executive Editor Elana Varon at evaron@cio.com. Follow her on Twitter: twitter.com/elanavaron.

Minneapolis has donated about 1,100 old PCs to a nonprofit, which refurbishes them and gives them to low-income families.



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THE **TOP LINE** INTERVIEW :: **Umair Haque**

Efficiency Isn't Enough

Economist Umair Haque says that to restore economic prosperity, companies must rethink how they use technology **BY KIM S. NASH**

**How does IT play a role in the continuing economic trouble?**

One driver of this great crisis is the paucity of information. We didn't have good enough information coming out of Wall Street. The credit ratings industry was putting out poor information. Our economic institutions [continue to] use incomplete, old, irrelevant information.

For example, corporate reports come out four times per year. And we take the Gross Domestic Product (GDP) as preordained. The GDP leaves out costs, such as social costs. One example is that the costs of cleaning up the BP oil spill were added into the GDP but the harm from it was not subtracted out. People lost livelihoods. The environment was damaged with lasting effects that we don't measure financially in any real way.

The GDP is a flawed number.

So GDP makes the economy look better than it is. Is any economic indicator being revamped?

We're beginning to use IT to track real-time data for inflation. We can use

it to gain a much more dynamic picture of what's going on. I would love to see a company give a weekly or daily financial report. Companies can say, "We think the GDP is a relic. We're going to try to pioneer a data set that can help us reinvent it."

Why should they change how they report business data?

Because these changes are beginning to happen globally. Which are the first two countries to announce plans to update their GDP to include social costs, such as pollution? India and China. American companies that do business in these countries are going to have to factor in those costs as well.

We've been successful as practitioners of IT at furthering the paradigm of more, bigger, faster, cheaper. We are less so in applying technology in the most economically sustainable ways. Being experts at using IT to deliver stuff to consumers only goes so far.

Meanwhile, America is facing a human development crisis. For the first time, the next generation is less educated than the one that came before. We

have obesity. An overarching pessimism.

You've talked about a Greek concept, eudaemonia, a meaningfully well-lived life. And you see a role for enterprise IT. What is it?

Over the last 20 or 30 years, economic gains have come from strategic use of technology to make the supply chain more efficient. But it's not enough to underpin a lasting prosperity. It's not enough now for companies to pursue a transactional paradigm.

You must build lasting relationships by delivering not just products but outcomes that matter to consumers. The competitive game becomes who can figure out what they can do to improve lives.

Too many CIOs are still steeped in using IT to drive efficiencies. If you want to take your job to the next level, you have to see that the future of IT is in reimagining how consumers and companies connect.

You've written that some "plodding giants" are getting enlightened. What's an example?

Through bits of code and relationships, Nike wants to try to construct an ecosystem whereby people are tangibly improved. In the Nike+ program, you insert a sensor into your running sneakers, synchronized to your iPod. The system monitors your distance and form and progress over time to help you use your sneakers in a much more worthwhile way.

Nike is saying, "We're going help you set goals and reach them." And that's IT. The idea isn't that we should have less stuff, although many would argue that, but to get more out of the stuff we have.

Why can't we do that with everything? Pharmaceutical companies could use IT to help people get the most out of their drugs. Help people achieve goals and reach their potential—that's what we're *not* doing with IT now.

Umair Haque is director of the Havas Media Lab and author of *The New Capitalist Manifesta: Building a Disruptively Better Business*. Contact Senior Editor Kim S. Nash at knash@cia.com. Follow her on Twitter: twitter.com/knash99.

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Analytics Uncorked

A wine and spirits distributor tries real-time business intelligence

BY STEPHANIE OVERBY

Charmer Sunbelt Group CIO Paul Fipps doesn't usually make IT investment decisions on instinct alone. Except, that is, when it came to implementing SAP's new in-memory analytics engine.

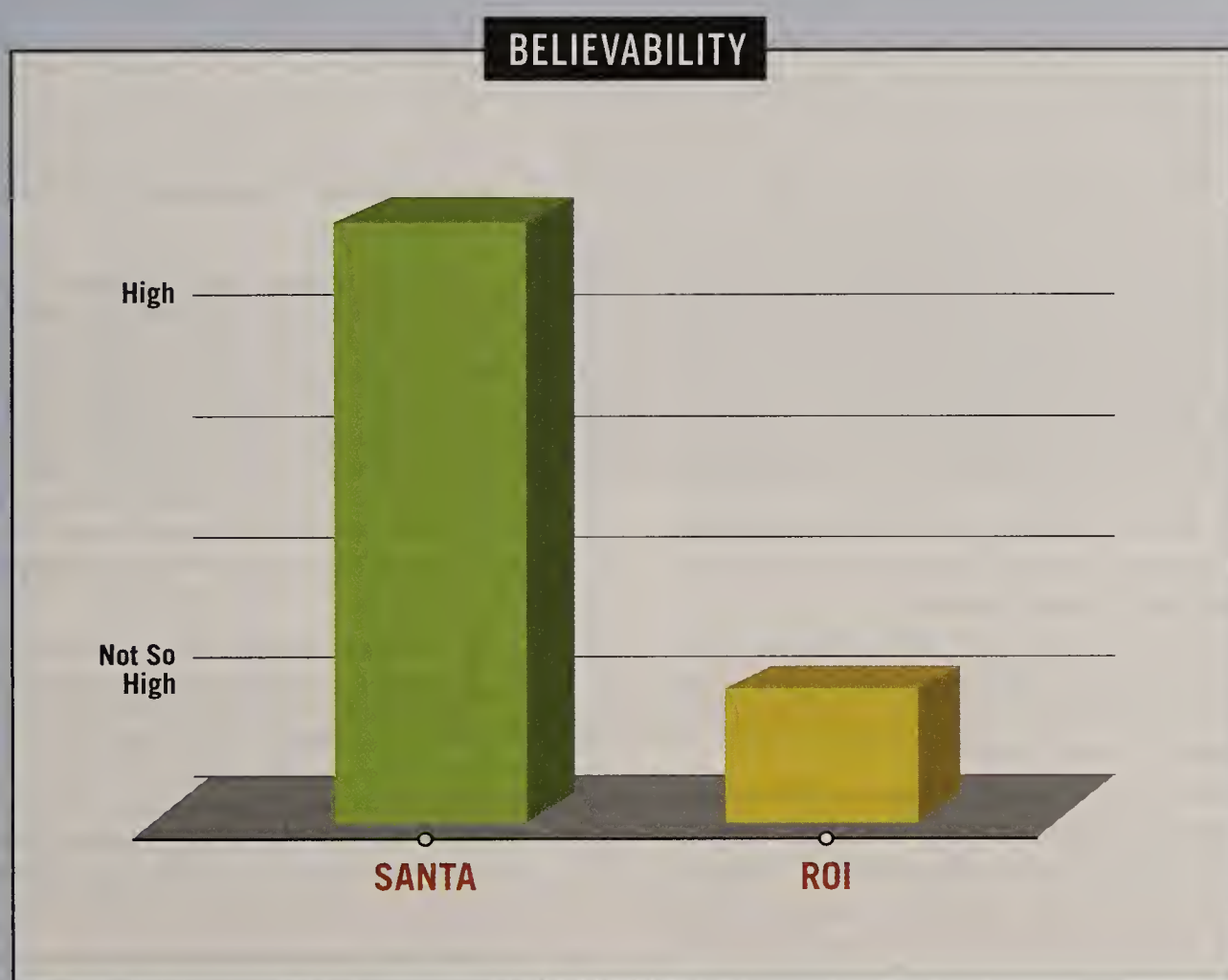
The \$4.9 billion wine and spirits distributor had been an SAP shop since 2003, but never saw a need for the vendor's business intelligence tools. IT exported ERP data into Microsoft analytics services for finance and sales analysis and ran custom reports in the core SAP system for operations. "SAP had a traditional business intelligence tool," Fipps says, "but there was no real business case for it."

Normally, every IT investment goes to a strategic governing body for cost-benefit vetting, says Fipps. But the executive vice presidents of all functional areas green lit the in-memory analytics project without any articulated hard benefits or even a pilot. "We jumped into this way ahead of what we would normally do," Fipps says. ▶▶



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It was the promise of near real-time analytics that attracted Fipps to SAP's high-performance analytic appliance (HANA), which places data in main memory rather than reading it off disks. The 15-plus-year IT veteran envisioned HANA streamlining the company's most labor-intensive processes: the pick-pack-and-ship work that takes place in the wholesaler's warehouses.

Warehouse managers do their best based on experience and intuition, but operational performance varies wildly from location to location. More timely analysis could help them better manage inventory and staff, maximizing productivity. "Most of our labor costs happen at night," Fipps says. "If we could give these guys the information to make better decisions [then], that would give us a competitive advantage."

There will be next-day benefits too, says Fipps. The company will use HANA to create a daily, visual analysis of operational performance for company executives so they can make decisions that lower costs or increase customer satisfaction. Previously, this time-intensive analysis wasn't feasible for daily reporting.

The implementation was halfway done in June with plans to go live later this month. "It's going to be bumpy," he says. "Right out of the gate, we had problems getting the [Dell] hardware and [SAP] software here. Just getting started is difficult because it is so new."

He wouldn't have taken the chance with any other functional group. "Operations is very agile and all about continuous improvement," Fipps says. "They want that next advantage to drive productivity."

The biggest question for Fipps has been, When does fast data crunching make sense? "We're making decisions about what needs to be done within 30 seconds and what needs to be done within fifteen minutes," Fipps says. Time card data won't need to be updated every half minute; pallet replenishment data will. One pleasant surprise has been how easy it is to model new data views once the architecture is in place, says Fipps.

Once the system is live, all eyes will be on operational metrics such as man-hours per case to determine whether the system is delivering as hoped. "The true measure of success will be [whether] we can move the needle in real time," he says. "How many trucks can we receive per day? How fast can we get that Grey Goose off the truck?"

Fipps pictures monitors throughout the warehouse letting everyone know how they're doing. Eventually he hopes to use in-memory analytics for pricing and financials. He also has a backup plan to his SAP contract.

"We rarely use prayer as a corporate strategy," says Fipps. "But this is a unique situation."

Stephanie Overby is a freelance writer based in Massachusetts.

Things You Need to Know

ANONYMOUS HACKERS

1 NOBODY'S IN CHARGE. "We are Anonymous. We are legion." This cryptic slogan is used by a band of hackers who call themselves Anonymous. Active for nearly a decade now, the group catapulted into prominence in the past year with attacks on PayPal, Visa, HBGary and Sony. Often called a hacking collective, Anonymous is essentially a movement. There is no central authority. From time to time, participants band together to launch "operations," led by a small group of trusted associates. The operation leaders write up orders and invite anyone who is interested to participate. Operations can happen online or in the real world.

2 THEIR ATTACKS SEEM RANDOM. Roughly stated, Anonymous cares about digital freedom and exposing hypocrisy and corruption. Motives for their attacks may seem obscure to upper-level management, but they often make sense to geeks. The group first gained prominence for attacking the Church of Scientology and the Recording Industry Association of America. When PayPal, MasterCard and Visa stopped processing payments for WikiLeaks late last year, Anonymous saw this as a threat to the free exchange of information and attacked.

3 THEY'RE CAPABLE. Early on, Anonymous's hacking didn't amount to much more than the occasional distributed denial-of-service attack. Lately it's shown a scarier, more technically adept side. In February, members broke into HBGary's mail server and website, ultimately posting tens of thousands of the company's private emails online. Subsequent attacks linked to Anonymous, and its spin-off group Lulz Security, demonstrated mastery of attacks such as SQL injection, social engineering and controlling botnets. A favorite attack is to "dox" a company they don't like: This means breaking in and exposing the personal information of corporate officers and their families.

4 THEY'RE INTERNATIONAL. Although English is the language of choice for most communications, alleged members have been arrested in Holland, France, Italy, Spain, the U.K. and the United States. And Anonymous has encouraged spinoff groups globally.

5 THE P.R. MOTIVATES THEM. Many of those who join Anonymous see themselves as hacktivists—a new breed of online protester whose activities gum up cyberspace in much the same way massive demonstrations gum up city streets. The ultimate goal seems to be changing public perception more than disrupting business. PayPal, MasterCard and Visa experienced some Web downtime, but payment processing was unaffected by the attacks. The real pressure comes from the news stories. Nobody wants their brand linked to a hacker attack. —Robert McMillan

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Unearthing Innovative Ideas

Public and private networks can pave the way for more affordable idea creation

BY MADELINE WEISS AND JUNE DREWRY

Ten years ago, pharmaceutical giant Eli Lilly launched an internal website called InnoCentive. The aim was to harness brainpower from its global staff to solve problems that had thus far stymied its R&D experts.

Today 34 companies—including Boeing, DuPont, Novartis and Procter & Gamble—use InnoCentive to find solutions from 90,000-plus scientists in more than 40 disciplines across 175 countries. Scientists receive payments of up to \$100,000 for their ideas, which have launched such innovative products (and huge revenue generators) as P&G's Swiffer floor mop. (For more on innovation culture, see "Make What's New Normal," Page 14.)

The success of sites such as InnoCentive has spurred Internet-enabled innovation in myriad industries.

At the Society for Information Management's Advanced Practices Council (SIM's APC), we see the CIO's business strategist role evolving to include leading innovation efforts, outpacing the competition and anticipating customer needs. Yet identifying innovative opportunities and solutions can be costly and difficult. Internal R&D is expensive and doesn't always yield profitable results. Employees at large companies who don't get a fair hearing for their ideas often get discouraged and stop trying—or worse, take their good ideas elsewhere.

Over the last few months, APC researchers and members identified some successful low-cost approaches to finding innovative opportunities and solutions. What all of these approaches had in common was this: smart use of the Internet and of company intranets.

Building the Pipeline

For example, Cisco recently awarded \$250,000 to the winner of its Internet-based campaign to identify its next billion-dollar business: a sensor-enabled smart electricity grid. Two years ago, Netflix's Internet-based Netflix Prize campaign awarded \$1 million to people who could improve the accuracy of predictions of customers' movie preferences.

Chubb Group of Insurance Companies has funded 24 ideas with \$5 million since 2009, extending its original internal search for profitable growth ideas outside to independent agents, partners and suppliers. Chubb's second innovation jam, which was focused internally, generated cost reductions in such areas as application support and project lifecycle streamlining.

AT&T also took an internal approach by launching The Innovation Pipeline (TIP) on its intranet to convert its patent portfolio into revenue-generating ideas for customer products and services. There are three phases to each TIP campaign, which lasts three months.

The initial social innovation phase issues an open call to AT&T's 40,000 staff members. Ideas are posted on the intranet for employees to discuss and to invest in with TIP dollars (\$10,000 in virtual currency granted to each staff member), placing bets on which ideas have the greatest revenue potential. Winners are selected for the second phase, then provided with funds to develop a prototype and business case. The third phase identifies and moves some projects from prototype to production.

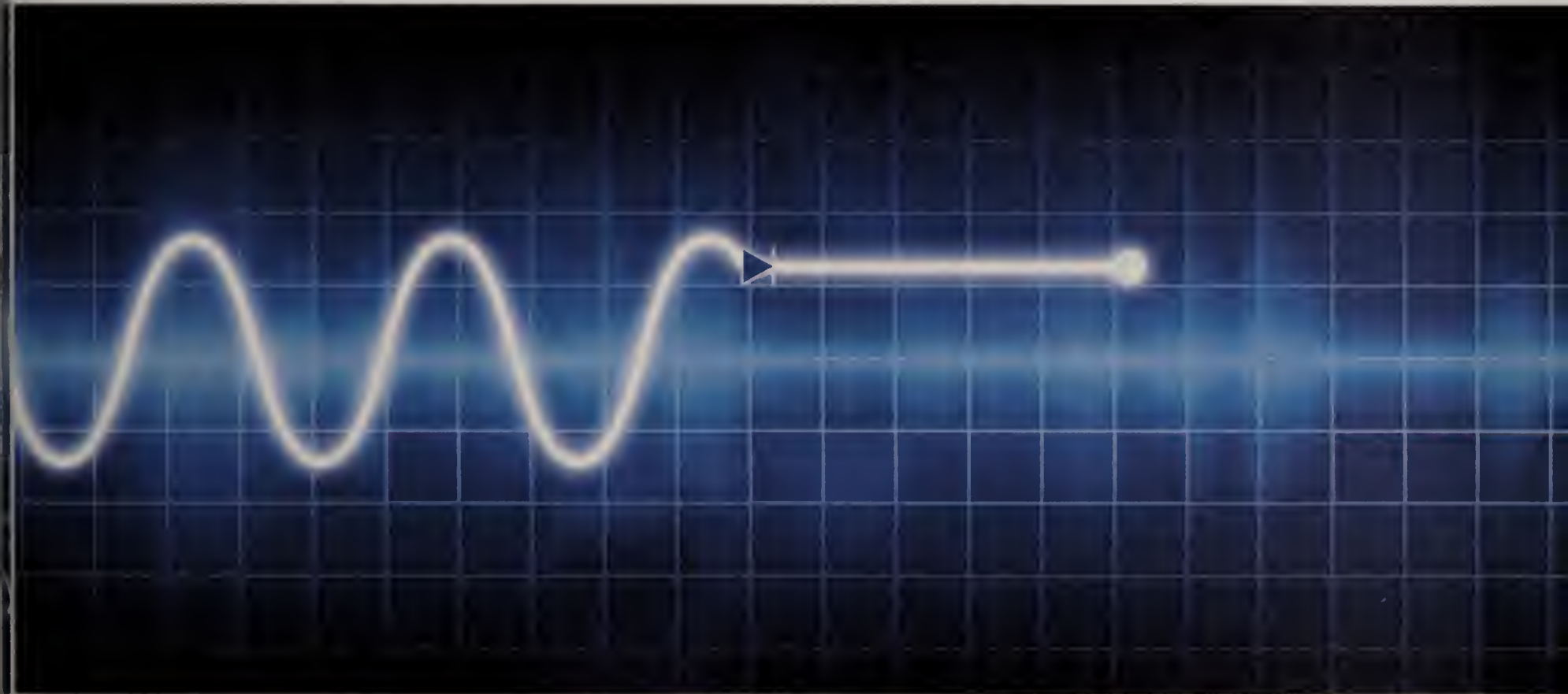
IBM has long been a thought leader in collective brainstorming, hosting innovation jams since 2001 for staff, business partners and customers. The jams are intended for idea creation, incubation and implementation. Ideas generated through its ThinkPlace intranet have garnered \$500 million for IBM since 2005.

All of these companies provide inspiring examples of leadership in business strategy that leverage public and private networks to get a competitive edge in today's markets. CIOs from any industry can take advantage of these models of low-cost but high-payoff approaches. So now the question becomes: How are you harnessing the power of these technologies for innovation in your company?

Madeline Weiss is director of the Society for Information Management's Advanced Practices Council (APC). June Drewry is former CIO of Chubb and a contributing adviser to the APC.

CIOs from any industry can take advantage of these models to initiate low-cost, high-payoff approaches to innovation.

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The Complexity of Compliance

What to ask vendors about security before moving applications to the cloud

BY JIM BUCHANAN

Cloud computing seems simple.

But once you scratch the surface, you'll find more questions about regulatory compliance than you ever thought you'd need to ask.

You may have internal controls in place to comply with regulations such as Sarbanes-Oxley and HIPAA. However, moving to a public-cloud infrastructure platform, a cloud-based application suite, or something in between will mean giving some control to the vendor.

When you evaluate cloud vendors, start by looking for sound practices and strategies for user identity and access management, data protection and incident response. These are baseline compliance requirements. Then, as you map specific requirements to your prospective vendor's controls, you'll likely face some challenges.

Data location is one. The European Union Data Protection Act, for example, strives to keep people's per-

sonal information within the region. To comply, your cloud vendor should keep European customer data on servers in Europe.

Multitenancy and deprovisioning also pose challenges. Public cloud providers use multitenancy to optimize server workloads and keep costs down. But that means you're sharing server space with other businesses. You should know what safeguards your cloud provider has in place to prevent breaches. Depending on your data, you may also want encryption. HIPAA, for example, requires it.

When deciding which applications to move to the cloud and when, you can look for whether vendors are certified for compliance with typical financial and information security regulations. But certification doesn't guarantee compliance.

Regardless of your company's size or status, don't assume your vendor's standard terms and conditions will fit

your requirements. Start your due diligence by examining your contract.

Working for a large company can give you leverage to negotiate, but a smaller business can find leverage, too, if it represents a new industry into which the vendor wants to expand. Don't be afraid to negotiate.

As security improves, the risks of using the cloud should diminish. Even today, according to Jonathan Penn, vice president and principle analyst for Forrester Research, "the security issues don't worry enterprise security teams as much as other IT trends," such as consumer devices in the enterprise.

Ultimately, Penn says, security will be a speed bump to cloud adoption, not a showstopper.

Jim Buchanan is a freelance writer based in Massachusetts. To read a longer version of this story, go to: www.cio.com/article/687434.

Study Finds Fear of Change Impedes Cloud Adoption

It's not budgets, technology or strategic worries that are creating roadblocks for cloud projects in many enterprises. Instead, deep-seated fear of change and the need for more education are keeping many enterprises from moving forward, concludes a study from TheInfoPro.

Fifty-two percent of respondents from midsize and large enterprises said a new attitude is critical to the success of their cloud plans. Companies underestimate the fear of change when they take new approaches, says Sean Hackett, an analyst for TheInfoPro. "It's not just changing what people do all day in terms of how they use software, it's also about infrastructure and application developers and how they think about [their jobs]."

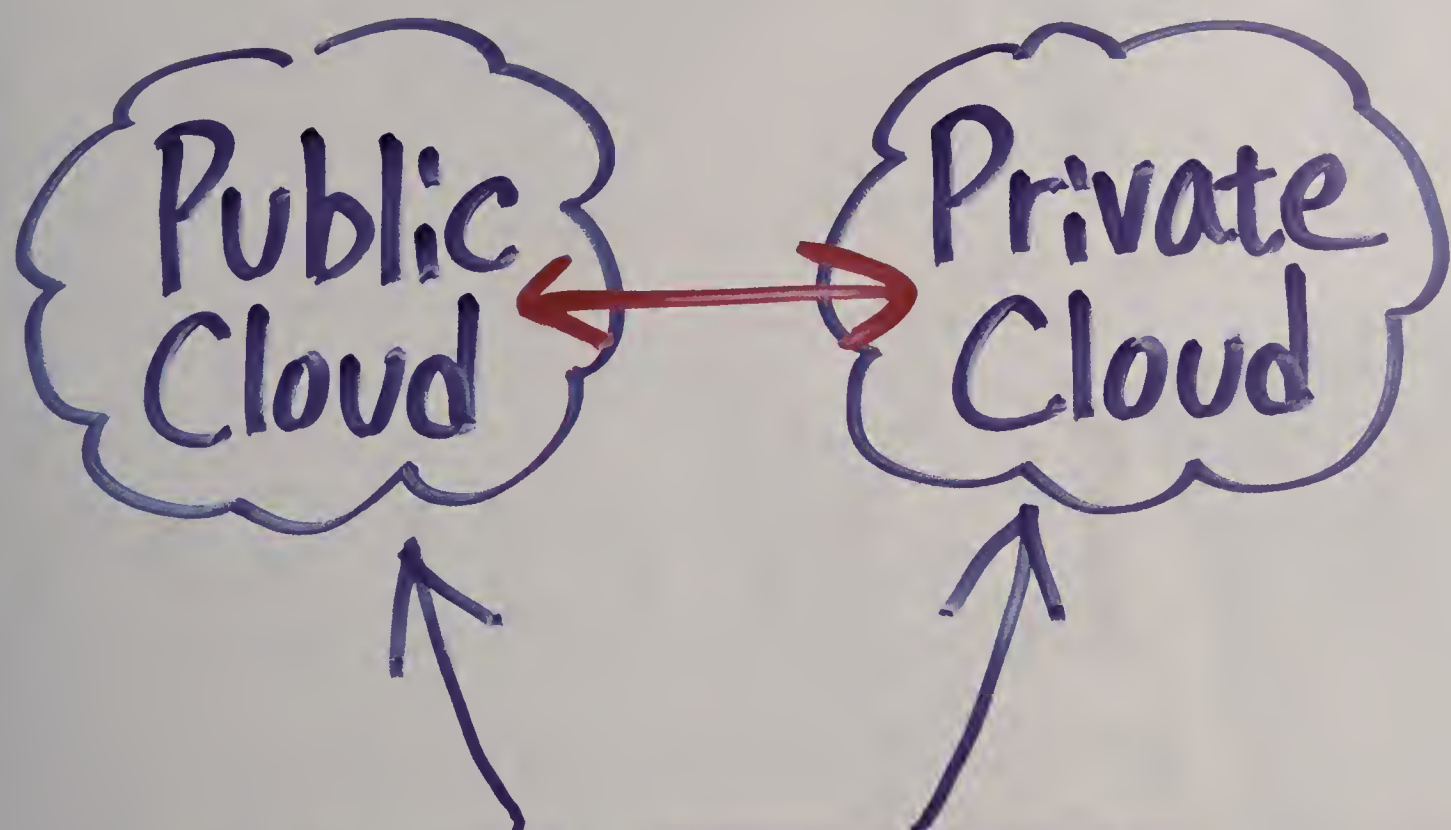
Companies need to prepare workers for what's to come, Hackett says, which means they need to work hard to engage IT staff members, educate them and get them

on board as the strategy is being mapped out. When asked for advice about pursuing cloud strategies, some 40 percent of survey respondents suggested enterprises should plan more than they think they need to.

Jumping into a cloud project just isn't as simple as IT leaders expect, Hackett says, particularly when it comes to integration issues. For example, companies sometimes make initial cloud decisions without looking at how other IT processes will be affected later. "Now maybe they have Salesforce and SAP on the back end and they want to enter new customer records, but the two systems won't talk to each other," Hackett says. "In essence, they've gone out and procured a lot of technologies and they don't mix, creating a lot of silos again."

That certainly doesn't inspire confidence among your IT team and users.

—Todd R. Weiss



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Do It Yourself

28

Building your own software sounds nuts.
But five companies found
competitive advantage in doing just that.

BY KIM S. NASH

Enterprise software has long been available, neatly packaged, for all core corporate functions.

And now, in the age of cloud computing, it can be turned on and off like water from a spigot. Outsourcers run our data centers, technology is for sale at discount warehouse clubs. And still, some CIOs choose to build major software from scratch. Why?

Creating competitive advantage is the goal of many IT innovation projects, and in some cases you can't achieve that without building your own systems. The New York Stock Exchange (NYSE) Euronext and its fierce rival Nasdaq OMX, for example, run custom-built trading systems that they continually tweak for stability and speed.

Other companies elect to build software because they must support unique business processes. That is the case for Alcoa, a \$21 billion company that manufactures aluminum sheets that will become products as varied as beer cans and airplane exteriors.

Still others seek to invent new markets or ways to operate—business ideas for which no ready-made software exists. Not everything in IT is a commodity like a box of 500 picnic forks. Consumer products distributor Eurpac, for example, built a logistics system to ensure that items like soft drinks and toothpaste reach customers on military bases in Afghanistan, and that these goods arrive still fresh and in good condition.

"The [software packages] we saw are very good at making automated business decisions and supporting efficient supply chains in a typical environment," says Mike Skinner, Eurpac CIO. A war zone, however, "is not typical," he says. "Packages don't understand so many exceptions to the rules."

Sometimes, all three objectives lead a CIO to custom development. Private equity powerhouse Kohlberg, Kravis and Roberts (KKR) wrote a business intelligence system to consolidate, harmonize and analyze monthly financial and operations data from the 70 companies it owns in nine industries. The software also generates metrics that cut across these diverse companies, to show how KKR, on the whole, is doing. No vendor

PHOTO BY HARRY GIGLIO

For **Kevin Horner**, CIO of Alcoa, a successful software innovation project requires setting accurate expectations of a project's scope and regularly communicating with staff.

offers this, says CIO Ed Brandman, so he had to build it.

In general, Brandman says, “the pendulum has swung very hard to ‘Why would you ever want to build anymore?’ It was a major commitment by the firm to allow us to go down that road.”

But the payoff is big. Now top KKR executives call the system a competitive weapon. And that is the primary reason a CEO will approve a risky project to write software in-house, says Louis Gutierrez, a consultant at the Exeter Group. “The only thing they want to invest in is something no one else has.”

Building unique software is certainly not the main business of KKR, nor of Alcoa, Eurpac or NYSE Euronext. And they learned lessons along the way, including how to overcome the difficulties of forecasting project costs, how to choose the right IT staff for such strategic work, and how much collaboration and confidence managing a custom software-development project requires.

“Building is not easy,” says Steve Rubinow, CIO of NYSE Euronext. “If it were, everyone would do it and we’d get no edge.”

SLIPPERY COST-BENEFIT

Getting approval for a major custom project requires special handling. CIOs must prove that riskier in-house development is worth it, in cost or time savings as well as in competitive advantage, says Exeter Group’s Gutierrez. “It is on this frontier border where innovative companies will always find the need to develop custom code. Not because they want to return to the days of big application-development shops, but because the

stuff just doesn’t exist yet to do what you want to do.”

And estimating costs and benefits can be like planning a big home renovation—even when you think you’ve accounted for everything, tearing down that first wall can unveil surprises that take your project, and budget, in unexpected directions. When implementing packaged software, even if it requires many modifications, costs are pretty clear. Just add up licensing and maintenance fees, plus the price of associated new hardware, labor, ongoing support and perhaps outside consulting.

In a build-your-own situation, forecasted costs and potential returns are unclear because the project likely stretches a company into new markets or enables it to gain a new competitive edge. As Rubinow notes, it’s hard to predict the value of something you haven’t done yet.

NYSE Euronext built its Universal Trading Platform with C and Java development tools in 2008. It now sells the system to other exchanges, but at the beginning, Rubinow says, there was no way to put a number on the new business. “You put some estimates and guesses into ROI, but it’s hard to do that. There’s greater risk and greater uncertainty.” Yet systems at the heart of a business sometimes demand customized work, he says. “You can’t buy those off the shelf and expect to be a leader.”

NYSE Euronext doesn’t reveal sales figures for its trading platform, but its revenue-generating IT services group brought in \$444 million in sales last year, up from \$363 million in 2009. The exchange remains the biggest in the world, handling trades of 654 billion shares of equities in the United States last year, ahead of Nasdaq OMX’s 475 billion.

KKR also expected big returns from its finished product. Private equity investors certainly monitor the financial health of the

Data Mining for Competitive Advantage

Unique business intelligence and analytics systems are a common choice for DIY projects

When CIOs elect to build software from scratch, analytics systems are a popular project. The hope is that companies can find new insight and competitive advantage using data they already have.

Kohlberg, Kravis and Roberts (KKR) built such a system. It analyzed the private equity firm’s overall financial health by aggregating data from its portfolio of companies. The new system enables managers to react to current events—like unemployment trends—by adding new metrics. For example, the system can look at employee turnover data from all of KKR’s companies, or just a selected slice, and compare those findings to other

data points already in the system, says Ed Brandman, CIO. “When we were making decisions [about starting this project] three years ago, vendors didn’t understand what we wanted to do,” he says.

The system won KKR a 2011 CIO 100 award. The award recognizes projects that advance business strategy through the innovative use of IT. Business intelligence and data warehouses were among the most popular technologies used by this year’s winners. Louis Gutierrez, a consultant with the Exeter Group and a CIO 100 judge, thinks this shows that sophisticated data analysis can differentiate companies. “The very essence of

business differentiation and innovation is doing core stuff in new and value-adding ways,” Gutierrez says.

Although KKR started with Crystal Reports, a reporting tool, and MySQL, an open-source database, developers used Java to write code for the particular kinds of queries and types of data the company wanted to use, Brandman says.

Kevin Horner, CIO of Alcoa, says custom code yields the most strategic value from business intelligence. When companies augment templates and report writers with unique analytics tools, “The data is all yours, and so is the way you choose to use it,” he says.

—K.S.N.



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companies they own, but KKR wanted to go further by applying analytics and proprietary formulas to that data to come up with a more accurate view of the overall performance of those companies. That is, find new ways to interpret financial indicators that are very different in different industries. For example, while inventory turns are key to toy retailer Toys “R” Us, the magic metric for electricity company Energy Future Holdings may be distribution costs as a percentage of overhead.

Steve Rubinow, CIO of NYSE Euronext, is careful to keep all aspects of any unique development projects in-house. “There are very few things that are a sustainable competitive advantage. Smart people copy what you do,” he says.

“There aren’t a lot of mega buyout, top-tier private equity, alternative investment managers in the world,” Brandman says. “There are fewer of them who look to manage information the way we manage it.”

A black and white photograph of two men in a server room. The man on the left is Black, wearing a dark vest over a light shirt and dark pants, with his arms crossed. The man on the right is white, wearing glasses, a patterned button-down shirt, and light-colored pants, with his right arm raised towards a server rack. They are standing in a long aisle between rows of server racks filled with equipment and cables.

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"Building is not easy. If it were, everyone would do it and we'd get no edge."

—Steve Rubinow, CIO, NYSE Euronext

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KKR ended up spending \$2 million building the system. To estimate expenses before starting the project in 2008, the IT group worked backwards, building a detailed budget, Brandman says. They worked from an estimate for implementing packaged software that, although it didn't do much of what KKR wanted, was related to the project's goals. Then came estimates for modifications.

Meanwhile, he projected how much time and effort his staff would need if it started from scratch. The team had built smaller projects with Java, MySQL and Crystal Reports, so Brandman extrapolated. Ultimately, he determined that his team could build a system for the same or less money than heavily customizing a package—and it would do exactly what KKR wanted.

While \$2 million may seem a pittance for a company that manages \$61 billion in assets, Brandman was concerned. In custom projects that aim to create technology that doesn't exist in the marketplace, he says, "there's a real risk costs will go out of line."

To help ward off overruns, he kept the team small: three highly experienced developers and project leaders who had worked together for more than 10 years. They did no other work during development. More than half of the \$2 million, about \$1.6 million, went to labor costs, Brandman says, including bonuses and other compensation for making the project successful. "They knew this was going to have significant financial benefit if they delivered it. And if they didn't, there wouldn't be."

STAFFING RIGHT

No matter how tricky the financials are on a custom project, staffing can be more so. The skills needed to plan and carry out the creation of a large, strategic piece of custom software may have atrophied since the days when IT built most of its own stuff, Gutierrez says.

Now, however, because CIOs don't undertake major in-house development work unless the end product provides a strategic advantage, developers on the project must know more than C or Java, he says. They must understand enterprise architecture, business process management, and the broad business issues facing the company and its competitors.

Brandman was lucky enough to have the three trusted senior

developers already on his staff. Other companies have to look for new hires. Recruiter Kristen Lamoreaux, president of Lamoreaux Search and a columnist for *CIO* magazine, recently helped a large publishing company find a team leader with those kinds of skills to work on key mobile computing projects the company has planned. The publisher had contracted with outside companies to build multiple mobile applications. But because the company deemed mobile platforms critical to its business, the leadership decided to move development in-house, she says.

NYSE Euronext views application development as so strategic that it won't let even small slices of key projects go to outside contractors. "There are very few things in most industries that are a sustainable competitive advantage. They erode. Smart people copy what you do," Rubinow explains. "We want to be very cautious and make it hard for our intellectual property to leak into another company."

Rubinow competes for IT staff with Wall Street companies that offer larger salaries. To tap into different talent pools, the exchange set up major IT outposts in Chicago; London; Belfast, Northern Ireland; San Francisco; Paris; New York; and Orlando, Fla. Dispersed developers work together using Microsoft SharePoint collaboration software, videoconferencing and source code control software. "There's no substitute for two guys sitting shoulder-to-shoulder and talking out loud to each other. I would want that if I could have it, but it's not practical," he says.

MANAGE DIFFERENTLY

When Kevin Horner, CIO of Alcoa, decides to do custom development, he makes sure his team understands both the business problem at hand and the expected payoff, such as financial benefits, competitive advantage or improved customer satisfaction. For Horner and other CIOs, framing the project appropriately at the start and repeating that message to everyone involved helps the work stay on track.

Alcoa prefers to buy as much software off the shelf as it can, in part to keep IT costs at 1.2 percent to 1.4 percent of revenue, Horner says. But it will build in the right circumstances. For example, the company has augmented its Oracle manufacturing systems by building and integrating capabilities for needs such as monitoring the quality of the aluminum sheets it produces for the aerospace industry, which are made by a variety of machines of different ages. "The sheet for beer cans has different requirements than the aluminum that ends up being skin for the Airbus 380," Horner says.

Alcoa also builds software to support aspects of its business where it believes it beats rivals, such as in certain metal-refining processes. IT and engineers code algorithms that control refining machines, he says. "You don't just walk into Oracle or SAP



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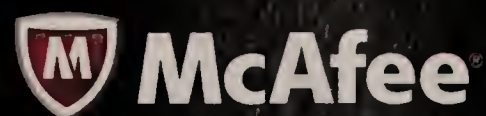
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or Honeywell to purchase these things.”

“This kind of custom work should be focused only on innovation, not just because some department likes to do things their own way,” Gutierrez says.

Owens and Minor, an \$8.1 billion distributor of medical supplies, manages custom development projects differently from those rolling out packaged applications. In 2006, the time came for Owens and Minor to modernize its core enterprise software. The system, a set of products written in Cobol, ran on outdated IBM mainframes. Rather than replace the ERP suite with packaged software, the company decided to move the system to HP servers running Windows.

As Owens and Minor’s CIO Rick Mears explains it, by rewriting existing software, 25 years worth of business processes and knowledge would not be lost or require expensive and time-consuming revamping. Craig Smith, CEO of Owens and Minor, estimates the project saved at least \$100 million. That includes vendor fees and avoiding the disruption to operations that is inevitable when moving to a new vendor’s ERP software, with its attendant business and workflow changes.

Following some of the precepts of agile development, Owens and Minor developers and project leaders inside and outside IT held quick meetings, sometimes twice a day, to update each other on progress, Mears says. The idea is to be brief; no one sits down. The development group has also converted individual offices to be more open, public spaces that facilitate collaboration and impromptu conversations, he says.

Eurpac’s Skinner also advises that, if possible, companies should send application developers to the scene where the software will eventually be deployed or where data for it will come from. He hasn’t sent anyone into Afghanistan because of the danger and travel restrictions, but IT staff have gone to Kuwait and Germany, key staging locations in Eurpac’s supply chain, to observe loading consumer products onto boats and trucks.

Here’s an example of the sort of insight such excursions can bring: Eurpac products move out of Germany’s Rotterdam Harbor on the Rhine River. A recent barge accident crippled traffic on the waterway for several weeks, forcing companies to get products onto trucks for transportation by land. “Until you’ve been over there and have seen how the Rhine is integral to our supply chain, you don’t know how important it is to build software that can handle exceptions,” he says.

With packaged software, it’s clear how to schedule roll-outs—after this module or that suite is tested, for example. With custom software, Skinner advocates an early launch where improvements are made as soon as users give feedback. After all, the team is presumably building the system to change how

well the company works. IT shouldn’t be timid about releasing software, even if developers feel more could be done.

Developers can be perfectionists, however, reluctant to let go until every last zero is paired with its one. This can hurt the project’s ROI, Skinner says.

“Let’s say you envision software that makes you five times more efficient. But if you encourage the group to launch at the time when you’re two times more effective, then you’re living it. Then from there, decide next steps,” Skinner says.

“The pendulum has swung very hard to ‘Why would you ever want to build anymore?’ It was a major commitment to allow us to go down that road.”

—Ed Brandman, CIO, Kohlberg, Kravis and Roberts

The process of building these critical systems has not wed these CIOs to the idea of custom development—or even to maintaining custom code forever. Horner continually scans vendor products for new modules that could replace those Alcoa built. He already intends to evaluate whether to swap out some custom accounts receivable software, which was built in the early 2000s, for a vendor version. “Ten years later, [packaged] software is more mature. We’ll ask ourselves, ‘Does it make sense to take our customizations out?’” In fact, Alcoa is now replacing several custom-built applications from 15 years ago that monitor safety incidents at its factories in real time. “Now we can get that in standard software.”

Even within a custom project, NYSE Euronext might buy common components from vendors if it sees no business advantage in building the module, Rubinow says. And mixing in packaged pieces may get the project finished faster, so the company can ride the wave of benefits from a custom system that much longer.

For Brandman, a highly successful project built in-house carries psychological rewards for the development team. “It’s a boost to the staff when KKR has competitors in to look at what the analytics system can do,” he says, adding that the company has turned down opportunities to sell the software. Company founders Henry Kravis and George Roberts themselves lauded the system in public, crediting the development team by name, he says. “That’s a big deal.” **CIO**

Senior Editor Kim S. Nash can be reached at knash@cio.com. Follow her on Twitter: twitter.com/knash99.







CIO

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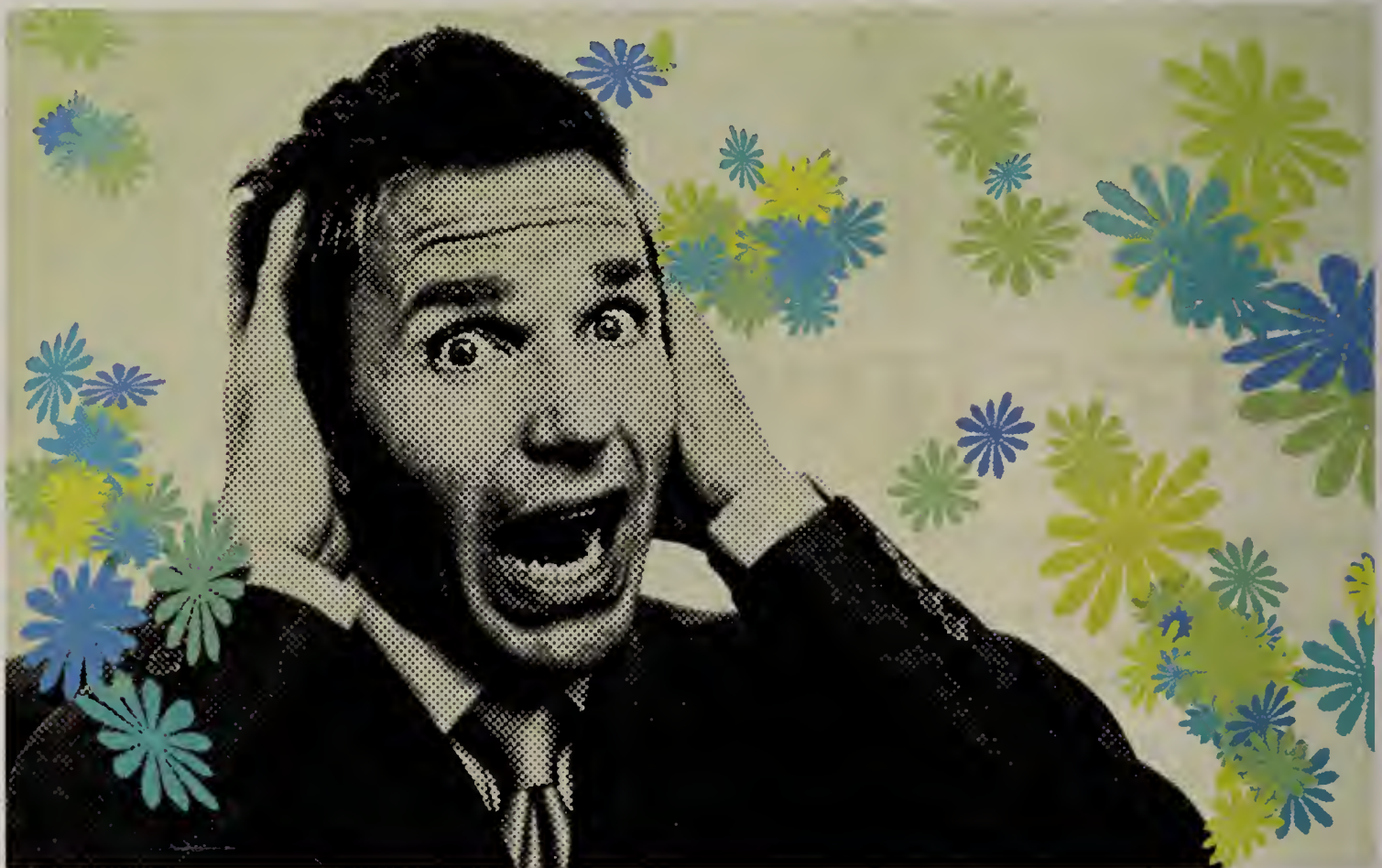
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SOUNDING BOARD

Calming Cranky Users

SCENARIO EnergySolutions is based in the United States, but we have offices around the world. Virtualizing our infrastructure with VMware and NetApp gave us a management and savings boost at the back end, but there are still latency problems, depending on the user's location, and significant differences in the application features and experience available on each client or device. If we in IT want to create business value, we have to provide applications that offer a common experience in today's mobile environments, no matter where users are or what devices they have in their hands or on their desks.

We chose VMware View for desktop virtualization to leverage our existing partnerships, and we established as diverse a testing group as we could. We've found, however, that while the technology can be complex, the expectations and sophistication of our users are a much bigger barrier. This is particularly true for tablets, and we have decided not to incorporate them until 2012. As a potential solution, both now and for the long term, we are looking at setting up an internal store with approved devices that will provide standardized interfaces. How have others addressed the issue of presenting virtualized applications on different devices and managing user expectations? ►►

The CIO Executive Council is a global peer advisory service and professional association of more than 500 CIOs, founded by *CIO's* publisher. To learn more, visit council.cio.com.

Put People First to Ensure Project Success

Timely Workforce Planning Boosts Success Rates in IT Infrastructure Projects.

The success of any IT initiative ultimately depends on the people driving it. Surprisingly, however, a recent survey TEKsystems conducted through IDG Research reveals that technology executives put a number of other priorities ahead of human capital considerations, and only 32 percent report being effective at workforce planning.

IT leaders are aware of the risk of poor workforce planning, and many admit to personally suffering the consequences. More than half report experiencing missed or delayed project deadlines (69 percent), technical complications or the need to rework portions of a project (62 percent) and delayed productivity (58 percent) as a result of failing to secure the right talent. In more than half of these cases, the associated financial impact of these events amounted to an increase of more than 10 percent in total project costs.

Workforce planning doesn't get adequate attention from IT leaders primarily because it takes time and tends to fall outside of IT's core competencies. Factors that make workforce planning difficult include:

- The war for talent. According to the U.S. Bureau of Labor Statistics, IT supply and demand are critically unbalanced.
- Local labor market differences. Supply and demand of IT talent at the local levels can vary vastly from national employment figures. It's critical for organizations to have a pulse on who is in their local labor pool, how much they cost, who else is after them and what they offer.
- Considering the full project lifecycle. Companies must plan for changing skill set requirements to effectively transition a project through the plan, build and run phases.
- Thinking about the future. Leaders must know where they are headed strategically, what initiatives they will undertake to achieve their vision and what parts of the plan they want to own or control internally.

Plan for Success

To help ensure successful IT project results, CIOs must make workforce planning a top priority from project inception. Here are some tips:

- Think holistically. Different circumstances call for different workforce strategies. Evaluate the need for contingent hiring, permanent hiring, managed services, project based support, functional outsourcing and training.
- Be proactive. Consider the changing competencies required for different stages of your transformation. Account for different workforce needs spanning the plan, build and run phases of your IT infrastructure project lifecycle.
- Access the biggest talent networks. For skills you don't have internally, you want to align with a partner that possesses a large talent pipeline of relevant skills it can quickly tap into.
- Make quality tangible. Ensure your methods to acquire talent don't cut corners on quality you'll end up paying for later. Look for robust methodologies and practices that assess business acumen, technical fit, and the past experience of the highly skilled talent you require.
- Remember retention. In a highly competitive market, retention should be an important consideration. Make sure the partner you are considering has robust capabilities and processes to ensure retention of top talent.

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TEKsystems' Network Infrastructure and Security practice focuses on data center, storage, unified communications, virtualization, security, and cloud initiatives. By partnering with clients to understand business targets, evaluate baseline skills and capabilities and address critical workforce gaps, the practice champions the critical workforce planning processes required to complete IT initiatives on time, within budget and according to quality standards.

For more information on this topic, download a free white paper at www.cio.com/whitepapers/teksystems.

►►► **Virtualization** Continued from Page 38

TINA ROURK, CIO, WYNDHAM VACATION OWNERSHIP

FOCUS ON APPLICATIONS, NOT DEVICES



ADVICE Since our user base has a mix of requirements that range from shared desktops to dedicated devices, we chose Citrix for our virtual desktop infrastructure (VDI). Our launch plans included focusing first on our owners and guests, and the associates who serve and interact with them, since they often use the same systems. We are also exploring how we support the high usage of individual mobile devices throughout our resorts and corporate locations.

To address user expectations and ensure common experiences across applications, we're also focusing on providing that standard look and feel. Controlling the devices can only get you so far in today's world, so we are considering implementing a policy that if the company provides the device, we will support it fully; if the user supplies the device, we will only support the corporate applications that are installed on the device. To provide better security controls on those mobile devices, we're using a tool called MobileIron.

As device options expand, tablets, of course, are a big factor to consider. They have presented challenges in our environment for a variety of reasons, including that few IT consultants have experience providing desktop virtualization on tablets. So we too are still researching how best to employ VDI on tablets based on the technology and management options for all our users.

**RICK GREENWOOD, CIO,
WELLS FARGO'S RURAL COMMUNITY INSURANCE AGENCY**

QUANTIFY THE BENEFITS OF CONTROL



ADVICE We found that while some things are common across clients and devices, like credentials and authorization, there's a tendency for the virtualized applications to behave a little bit differently on each. This does cause complications and confusion for users who want everything to appear as they are used to. So we have chosen to go with an approved list, much like the store idea. Everyone who is on our VMware infrastructure is on one of those approved and managed clients.

Almost 83 percent of our user base is virtualized now. That's quite a number of people, which of course means that there are some who are not satisfied with the approved devices and systems. To counter this, it is important to know your environment, and be able to quantify the soft impact and hard cost of having a nonstandard device in that mix. But it is just as important to have all the executives—top level and directors—on the same page. We brought together representatives from each of our five business areas and went through all the ways they could see their staff using the devices. And we had all the information and examples gathered before those meetings to be able to show how VMware and the devices we chose could meet those needs, and to demonstrate the cost and productivity benefits we had identified. Now that they understand how IT is helping and why this environment is the most useful for the company, we have no problem countering requests for non-approved devices.

TAKE Note

Manage Mobile Demands

CALL IN Cloud computing and mobility are no longer just buzzwords. Their significant effect is creating tensions in the CIO role: How do you enable users while maintaining security? How do you create agility while managing smooth integration? Who should have ultimate control over technology resources, business or IT? *CIO Paradox* columnist Martha Heller will moderate a discussion of how companies are managing these tensions as they reconsider their technology road maps, serve new customer bases and respond more effectively to the demands of business in a hyperconnected online world. council.cio.com/WEB0911

Weighing Consumer Devices

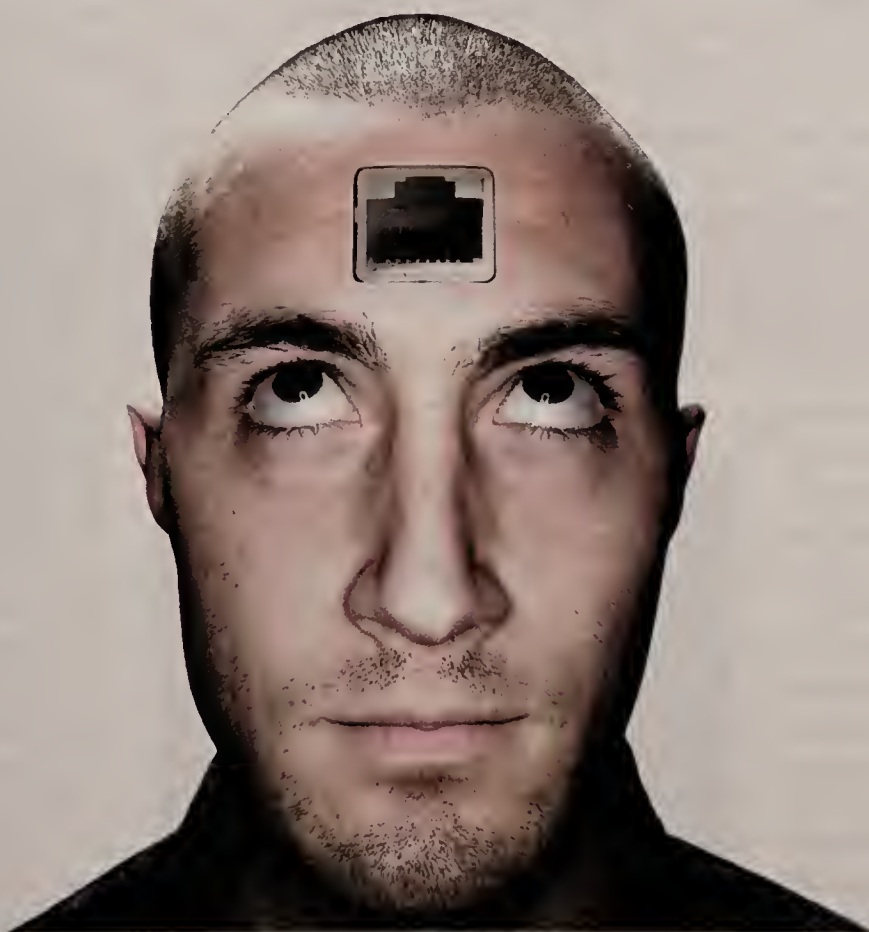
WATCH While consumer devices have become ubiquitous, CIOs know that doesn't mean they should automatically be accepted into the enterprise. Leaders are weighing the challenges and opportunities, as well as identifying business justifications and even revenue opportunities that might result from consumer device adoption—if they can address the risks. In this edition of the CIO Debate online video series, two Council members share their views on the issue, give insight into their decisions, and explain the benefits they've seen from embracing or waiting on consumer technologies. council.cio.com/DEB0911

Avoid Legal Pitfalls

DOWNLOAD The legal landscape is shifting around social media and mobile technologies at an ever-increasing rate. Add that to the growing importance of these technologies to companies' ability to differentiate themselves, and there is a lot on the line for businesses, their partners and their customers. In this webcast, Matthew Karlyn and Mark Neuberger, partners at Foley and Lardner, discussed the legal implications of social media and mobility in the enterprise. Viewers receive tips for avoiding legal snares and hear what others have learned. council.cio.com/DL0911



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Learning by Listening

Oakwood Worldwide's CIO became a strategic player by tuning in to users and customers **BY MARINA LUBINKSY**

Before I could build IT's value, I first had to understand my peers' goals.

It was as important for me to make time for personal conversations as it was for my team to deliver on time a project that would truly meet users' and customers' needs.

It started, of course, with establishing IT's credibility. This took several years, because while being a reliable provider of useful solutions is the basis of credibility, it was difficult and important to help certain managers in my organization become business experts. They are more than liaisons; they are the people in the IT group who fully understand what the company and our customers need.

I realized that I needed leaders in that role after I got a taste of what understanding those internal and external needs could do for me as a CIO and for Oakwood as a growing company.

Once we had established a base level of trust in IT's capabilities, I sat down with my counterparts in other departments, including the senior VP of sales. She talked about what she and her team were seeing in the field, what she wished they could do better, and I came to a realization. While I had wanted simply to further solidify my understanding of other functions, in those meetings I stumbled across what I could do to raise IT's value even more: Listen to users and customers at every level.

Personally, it helps that my company president is my former boss, the previous CIO of Oakwood. He has been a tremendous mentor to me. Not everyone has that kind of obvious connection, but I believe it is vitally important to find someone to fill that role for you if you are going to make the leap from credibility to partner and peer.

Beyond giving me advice, he also ensured that I now sit on the executive committee, where all company strategy is decided and action plans are determined. The trust I'd

gained led me there, but it was then up to me to keep that seat. And experiencing how the committee works has been an even better lesson. We do not talk about sales plans, or IT plans, but about strategic needs to grow the company and provide better service, and ideas are welcomed from any member of the committee.

I didn't want to rely on on-the-job learning, though. I sought out the management program at Northwestern

University's Kellogg School of Management, where I learned the value of networking, communication and listening. When I brought that back into the corporate environment, it helped me go from just being at the executive committee table to being an active, strategic participant.

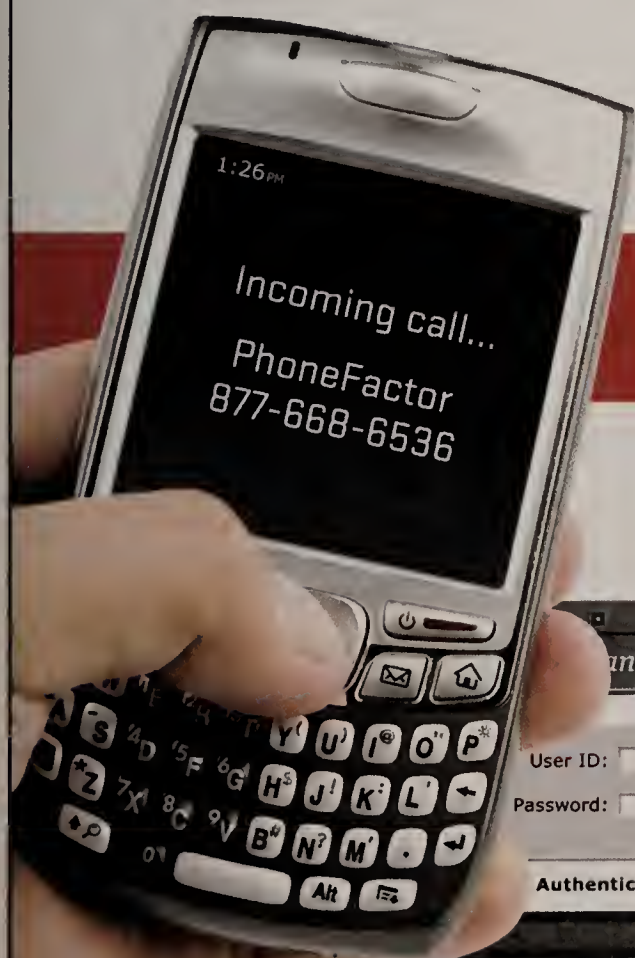
I'm still learning what more I can do to advance my and IT's role, and drive value for the company. But I know I have already succeeded in making a significant change in my approach and in my peers' understanding. In the middle of the poor economy of the last few years—and the budget cuts

and freezes—I got approval for the replacement of a major legacy system. This happened because I didn't sell it as just replacing a failing system, but as making a necessary upgrade to help the company move forward. That focus on strategy and results that I have gained makes me a more valuable business leader and CIO.

Marina Lubinsky is senior VP and CIO at Oakwood Worldwide, a real estate-management company. She's a member of the CIO Executive Council.



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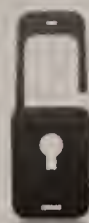
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Getting Mergers Done

CIOs must be early partners, thorough planners and fast movers to make IT a force in corporate M&A **BY MARTHA HELLER**

Here's a paradox for you: Successful acquisitions involve IT early, yet IT is typically brought in too late. Here's another: People are critical to a smooth acquisition, yet M&A teams often pay scant attention to employee communication. And finally: Leading an acquisition is a significant career opportunity for CIOs, yet many fail to live up to the challenge.

"CIOs tend to make two major mistakes during an acquisition," says Larry Rowland, formerly CIO and now VP of acquisition integration at Nuance Communications. "They delay the tough people decisions, and they assume that their own systems are better than anything run by the acquired company."

Randy Gaboriault, CIO of Christiana Care Health System, concurs that "a fatal flaw for CIOs during acquisitions is choosing diplomacy over the truth" when communicating the integration plan. He also finds that CIOs who believe they can create a perfect integration plan are missing a major M&A truth: "Sixty percent of your planning assumptions are going to be wrong, yet you still have to satisfy the financial commitments you based on those assumptions."

As if these potholes were not enough, Mike Brooks, CIO of Viterro, adds another: "CIOs who endlessly analyze both sets of systems in order to end up with a blended nirvana miss their targets," he says. "Both companies are hanging on your decisions, but you leave them in limbo while you try to develop paradise."

Clearly, the road to a smooth acquisition is fraught with peril. What can CIOs do to make it through?

Go early or go home. "Corporate development teams don't like to worry about IT up front; they want to bring you in after the deal is signed," say Rowland, who leads at least eight acquisitions a year at Nuance, which sells voice-recognition technology. "You need to buddy up to the M&A team, understand what deals are in the works,

and get involved in the due diligence process," he says.

Brooks agrees. "CIOs need to build a business case for involvement," he says. "They need to let M&A know that when they don't bring in IT and miss a reporting deadline, the SEC tends to get a little grumpy."

Plan early and often. "Once the CEO gives a number to Wall Street, it is poured in concrete," says Gaboriault, who has led more than 50 acquisitions. "To meet that number, you need a solid integration plan defined by a team of business owners and IT that answers: What does a successful integration mean? What does our end-state look like?

What systems will we be able to run on day one or 30 or 60?" he says. "If you and the business owners cannot articulate that before the integration begins, you have a problem with the deal rationale in the first place."

A well-communicated plan is particularly important to the IT team, says Rowland. "The executives talk about combined value and synergies, and the employees are thinking one thing: Do I

have a job? The sooner you communicate those decisions, [the sooner] everyone can plan their lives and focus. If you wait, you risk losing your best people."

Get moving. "In our first major acquisition, we promised significant synergies in a year. We delivered in nine months, because we made aggressive decisions and went in with a plan," says Brooks, who has completed more than a dozen acquisitions at Viterro. "Remember that any decision is better than no decision. You're going to get some of it wrong, but you have to keep the ball rolling."

Running acquisitions is not for the faint of heart. But the rewards are rich if CIOs can roll up their sleeves and get it done, says Brooks. "They'll see a career's worth of issues in a year of integration."

Martha Heller is president of Heller Search Associates, an IT executive search firm, and is a co-founder of the CIO Executive Council. She can be reached at martha@hellersearch.com.

During M&A, CIOs who analyze and design for systems integration nirvana will leave both companies in limbo.

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Paint By Pixels

When it comes to learning about art, museum audio guides offer only part of the story. Visitors to the recent exhibit “Picasso and Braque: The Cubist Experiment, 1910-1912,” at the Kimbell Art Museum in Fort Worth, Texas, could use an iPad app to get inside each artist’s head. Called iCubist, the app helped people understand cubism (as in Picasso’s *Still Life with a Bottle of Rum*, above) by breaking the paintings into parts and interpreting their meanings. Users could view ultraviolet or infrared images to reveal details of the works not visible to the naked eye. They could also take the images apart and reassemble them, like a puzzle, to see how they were created. Popup windows with information about the each artist’s style let users compare the artists, and a time line showed the history of cubism. The app, developed with digital imaging company MegaVision, was free to use on one of the museum’s 40 iPads. Malcolm Warner, deputy director and curator of European art, says the museum is planning apps for future exhibits.

—Lauren Brousell



Smarter computing builds a Smarter Planet: 3 in a Series

Smarter computing needs smarter clouds.

To build a smarter planet, we need smarter computing — computing that is designed for big data, tuned for specific tasks and managed in the cloud.

Cloud computing, in particular, is a hot topic these days. Many businesses are discovering this new model's power to step-change IT infrastructure management — with benefits in economics, performance and integration. The incorporation of cloud computing services and systems is transforming the data center.

International trade services firm GHY achieved four times its prior data center capacity, cut its IT budget by 14% and reduced IT time spent on server management from 95% to 5%. Leading marketing services provider Acxiom added 2,700 new servers without adding to their data center footprint and is realizing five times the performance of their previously installed dedicated servers. Signature Mortgage Corporation is using cloud to help its customers securely review and sign mortgage applications electronically from the convenience of their home or office, reducing loan-processing time from an average of 7 days to 24 hours.

Consolidation, data center efficiency and lower costs, though, are just the start. Leading companies are unlocking

the deeper potential of cloud as a new way to manage not just their IT but also their businesses. They're discovering how cloud can help create new marketplaces, profitable new revenue streams and smarter business services. And providing these services to innovators can profoundly change the way a company is experienced by customers, partners and society. True Value used cloud to help transform the management of its supply chain across 5,000 hardware stores in 54 countries, reducing lead time by 56% and back orders by 85%.

But while they are moving to clouds, these companies are not willing to compromise on fundamental business standards. They insist on strong governance to help safeguard the security and resilience of critical processes.

Smarter clouds offer exciting opportunities to improve the way organizations and businesses are run, how they ensure security and how they unleash innovation — while changing the way our world actually works.

Let's build a smarter planet. Join us and see what others are doing at ibm.com/smartercomputing/cloud

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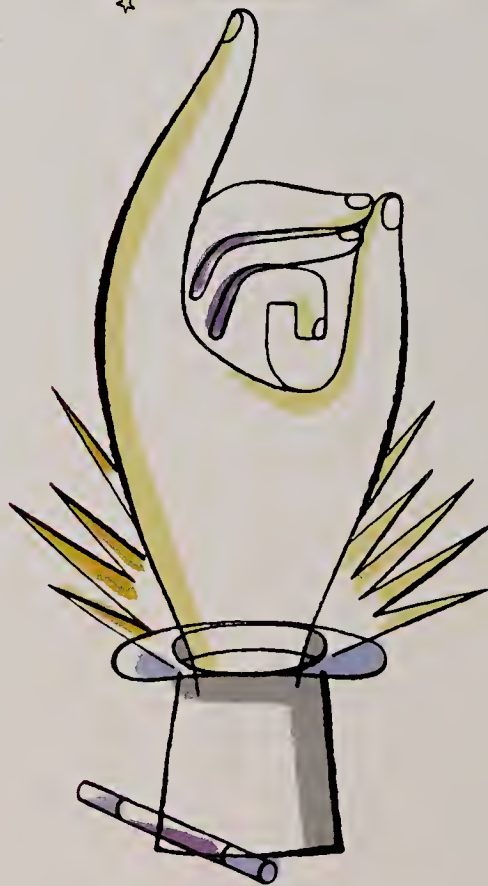
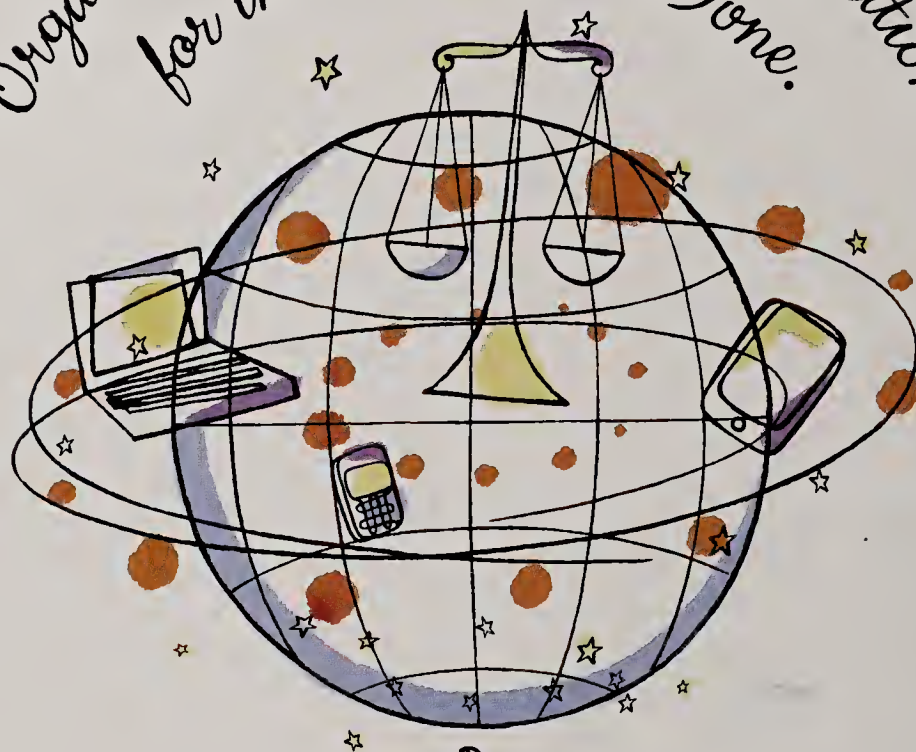


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